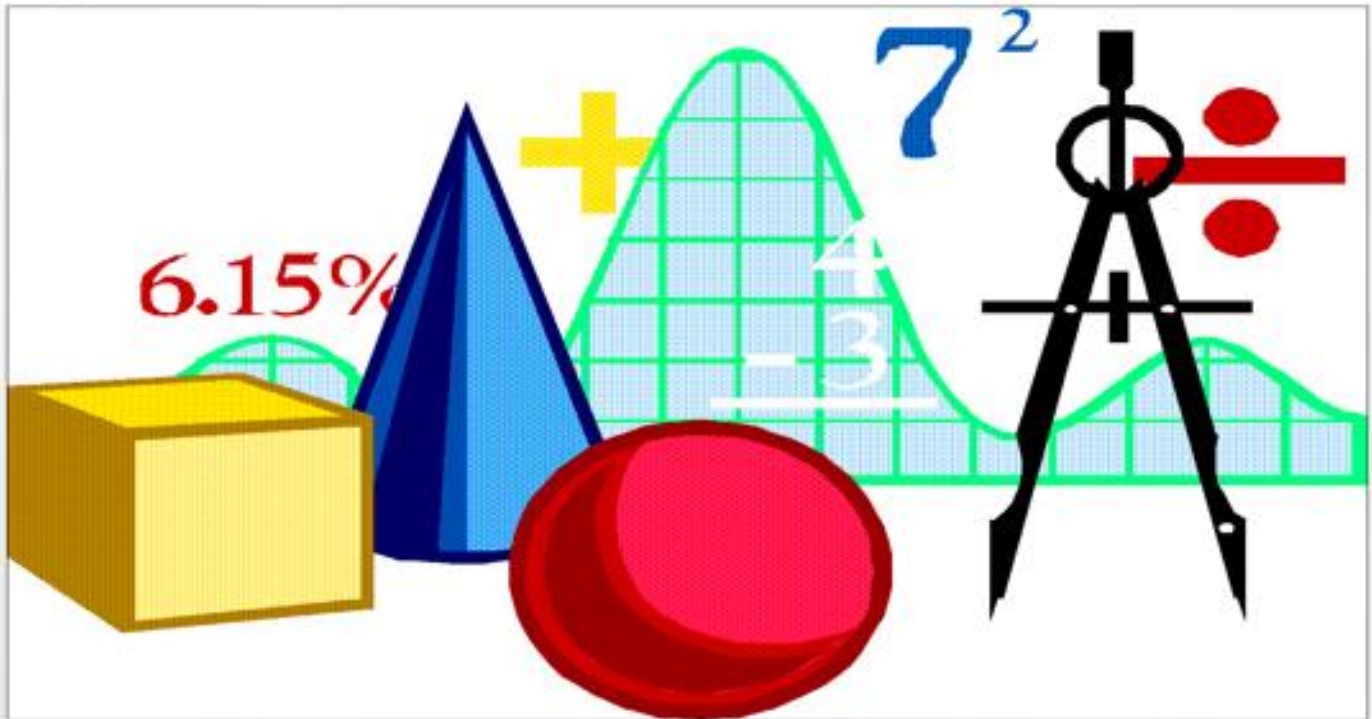




EJERCITO MEXICANO



**ESCUELA MILITAR DE MATERIALES
DE GUERRA**



MATERIA: MATEMATICAS V

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GRUPO: "A"

N.L. 7

ALGEBRA E INDETERMINACIONES DE LIMITES

$$1. \lim_{x \rightarrow 1} \frac{3x^2 - x - 2}{x^2 - 3x + 2} = \frac{3(1)^2 - (1) - 2}{(1)^2 - 3(1) + 2} = \frac{3(1) - 1 - 2}{1 - 3 + 2} = \frac{0}{0}$$

$$\begin{array}{r} 3x^2 - x - 2 \\ 3x \quad \times \quad -2 \\ x \quad \times \quad 1 \end{array}$$

$$\lim = \frac{(3x+1)(x-2)}{(x-1)(x-2)}$$

INDETERMINACIÓN
CORRECCIÓN

$$\begin{array}{r} x^2 - 3x + 2 \\ x \quad \times \quad -2 \\ x \quad \times \quad -1 \end{array}$$

$$\frac{3x+1}{x-1} = \frac{3(1)+1}{1-1} = \frac{4}{0} = \infty$$

$$2. \lim_{x \rightarrow \infty} \textcircled{1} \frac{5x^4 - 3x - 8}{7x^4 - 2x - 5} = \frac{5(\infty)^4 - 3(\infty) - 8}{7(\infty)^4 - 2(\infty) - 5} = \frac{\infty}{\infty} = \frac{-8}{-5} = 1.6$$

$$\textcircled{2} \frac{\frac{5x^4}{x^4} - \frac{3x}{x^4} - \frac{8}{x^4}}{\frac{7x^4}{x^4} - \frac{2x}{x^4} - \frac{5}{x^4}} = \frac{5 - \frac{3}{x^3} - \frac{8}{x^4}}{7 - \frac{2}{x^3} - \frac{5}{x^4}} =$$

INDETERMINACIÓN
CORRECCIÓN

$$\frac{5}{7} = 0.7$$

$$3. \lim_{x \rightarrow -4} \frac{4x^2 - 2x^3 - 7}{3x^3 - \sqrt[3]{x^6}} = \frac{4(-4)^2 - 2(-4)^3 - 7}{3(-4)^3 - \sqrt[3]{(-4)^6}} =$$

$$\frac{4(16) - 2(-64) - 7}{3(-64) - \sqrt[3]{4,096}} = \frac{64 + 128 - 7}{-192 - 16} = \frac{185}{-208} = 0.8894$$

DETERMINADO

JORGE ALBERTO RODRIGUEZ RUIZ

$$4. - \lim_{x \rightarrow 0} \frac{5x^2 - 3x^5 - 7x}{3x^3 - 4x^{10} - 8x} = \frac{5(0)^2 - 3(0)^5 - 7(0)}{3(0)^3 - 4(0)^{10} - 8(0)} = \frac{0}{0} \text{ INDETERMINADO}$$

$$\frac{x(5x - 3x^4 - 7)}{x(3x^2 - 4x^9 - 8)} = \frac{-3x^4 + 5x - 7}{-4x^9 + 3x^2 - 8} = \frac{-3(0)^4 + 5(0) - 7}{-4(0)^9 + 3(0)^2 - 8} =$$

$$\frac{0 + 0 - 7}{0 + 0 - 8} = \frac{-7}{-8} = 0.875$$

$$5. - \lim_{x \rightarrow -5} \frac{x^2 - 25}{3x + 15} = \frac{(x+5)(x-5)}{3(x+5)} = \frac{(-5+5)(-5-5)}{3(-5+5)} =$$

$$\frac{-10}{3} = 3.33$$

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